

Listing of Claims

In the Claims:

Claim 1. (currently amended) An isolated weapon simulator having a bolt providing recoil for a user when said weapon simulator is fired, said weapon simulator comprising:

 a housing including a piston chamber and a piston positioned in said chamber, said piston connected to the bolt;

 a regulated gas supply detachably attached to said housing;

 a valve chamber in said housing in communication with said regulated gas supply and the bolt;

 a recoil valve positioned in said valve chamber for producing recoil, said recoil valve including a first gate, a second gate, a third gate, and a fourth gate, with a distal valve cavity defined between said first gate and said second gate, a central valve cavity defined between said second gate and said third gate, and a proximal valve cavity defined between said third gate and said fourth gate, said proximal valve cavity being connected in communication with said regulated gas supply while said simulated weapon is not being fired, said recoil valve positioned to control the release of gas from said regulated gas supply to said piston chamber;

 a pilot valve connected to said regulated gas supply;

 a pilot channel connecting said pilot valve to said valve chamber, wherein said pilot valve transmits gas to said distal end of said recoil valve from said gas supply to shift said recoil valve in said valve chamber;

Application No. 10/631,944
Amendment dated September 19, 2007

triggering means for generating an electrical firing signal corresponding to said weapon simulator being fired, said electrical firing signal being transmitted to said pilot valve to open said pilot valve and transmit gas from said regulated gas supply into said pilot channel.

Claim 2. (original) The weapon simulator as described in claim 1 further comprising:

a recoil cylinder port connecting said piston chamber with said valve chamber;
wherein said recoil valve controls the release of gas through said recoil cylinder port into said piston chamber to move said piston.

Claim 3. (original) The weapon simulator as described in claim 1 further comprising:

a spring positioned in said valve chamber;
wherein said recoil valve includes a proximal end and a distal end; and
wherein said spring applies a force to said proximal end of said recoil valve in said valve chamber.

Claims 4-6. (cancelled)

Claim 7. (previously presented) The weapon simulator as described in claim 1 further comprising:

a gas supply channel through said housing connecting said gas supply with said valve chamber;

wherein said pilot valve conveys gas to said distal end of said recoil valve to displace said recoil valve in said valve chamber;

wherein said central valve cavity is in communication with said gas supply channel and said recoil cylinder port to allow gas to engage said piston in said piston chamber.

Application No. 10/631,944
Amendment dated September 19, 2007

Claim 8. (original) The weapon simulator as described in claim 1 further comprising an exhaust port traversing said housing from said valve chamber.

Claims 9-13. (cancelled)

Claim 14. (currently amended) A method for generating recoil in a weapon simulator when fired, said weapon simulator having a bolt slidably attached to a firearm housing, said method comprising the steps of:

- a) providing a piston slidably mounted in a piston chamber in the firearm housing;
- b) attaching a regulated gas supply to the firearm housing, said gas supply distributing compressed gas;
- c) providing a recoil valve in a valve chamber having a distal end and a proximal end, said recoil valve including a distal chamber, a central chamber, and a proximal chamber, said distal end of said valve chamber connected to a pilot valve, and said proximal chamber of said recoil valve being connected in communication with said regulated gas supply while said simulated weapon is not being fired;
- d) conveying gas using said pilot valve to said distal end of said valve chamber when an electrical firing signal corresponding to the firing of the simulated weapon is transmitted to said pilot valve;
- e) displacing said recoil valve in said valve chamber; and
- f) forcing gas from said gas supply through said recoil valve into said piston chamber to generate recoil.

Application No. 10/631,944
Amendment dated September 19, 2007

Claim 15. (previously presented) The method as described in claim 14 wherein step c) further comprises the step of:

biasing said proximal end of said recoil valve in said valve chamber with a spring.

Claim 16. (previously presented) The method as described in claim 15 wherein step e) further comprises the step of:

forcing gas from said gas supply into said central valve cavity of said recoil valve; and dispersing said gas from said central valve cavity into a recoil cylinder port connected with said distal end of said valve chamber to overcome the biasing force of said spring.

Claim 17. (currently amended) An independent weapon simulator generating recoil movement by displacement of a slide assembly when said simulated weapon is fired, said weapon simulator comprising:

a housing defining a piston chamber housing a piston, said piston connected to the slide assembly;

a gas supply to forcefully displace said slide assembly, said gas supply connected to said housing; and

a valve chamber in said housing connected between said gas supply and said slide assembly;

a recoil valve positioned in said valve chamber to control the release of gas from said gas supply to said piston chamber, wherein said recoil valve includes a plurality of gates defining a

Application No. 10/631,944
Amendment dated September 19, 2007

proximal valve cavity being connected ~~in communication~~ with said gas supply while said weapon simulator is not being fired, a central valve cavity, and a distal valve cavity;

an electrically-controlled valve connected between said recoil valve and said gas supply, wherein said electrically-controlled valve conveys gas to said recoil valve to displace said recoil valve in said valve chamber and supply gas to said piston chamber to displace said piston to generate recoil; and

triggering means for generating an electrical firing signal corresponding to said weapon simulator being fired, said electrical firing signal being transmitted to said electrically-controlled valve to open said electrically-controlled valve and transmit gas from said regulated gas supply into said valve chamber.

Claims 18-19. (cancelled)

Claim 20. (previously presented) The weapon simulator as described in claim 17, wherein said electrically controlled valve is a pilot valve.

Claim 21. (previously presented) A method for generating recoil in a weapon simulator having a slide attached to a firearm shell when said weapon simulator is fired the shell housing a piston positioned in a piston chamber, said method comprising the steps of:

- a) activating a pilot valve in the shell when an electrical firing signal corresponding to the firing of the weapon simulator is transmitted to said pilot valve;
- b) conveying gas from a gas supply through said pilot valve to a valve chamber housing a recoil valve having a plurality of gates defining a distal chamber, a central chamber,

Application No. 10/631,944
Amendment dated September 19, 2007

and a proximal chamber, said proximal chamber of said recoil valve being connected in communication with said regulated gas supply while said weapon simulator is not being fired;

c) shifting said recoil valve in said valve chamber with the gas from said gas supply;

and

d) displacing the piston in the piston chamber using gas forced into the piston chamber from said gas supply through said recoil valve to generate recoil.

Claim 22. (previously presented) The method as described in claim 21, wherein prior to step a), including the step of attaching a gas supply magazine to the shell.

Claim 23. (previously presented) The method as described in claim 14, wherein said step c) further comprises providing a recoil valve having a series of flanges defining said distal chamber, said central chamber, and said proximal chamber.

Claim 24. (previously presented) The method as described in claim 23, further comprising providing a first flange, a second flange, a third flange, and a fourth flange, said first and second flanges defining said distal chamber, said second and third flanges defining said central chamber, and said third and fourth flanges defining said proximal chamber.

Claim 25. (previously presented) The simulator described in claim 17 further comprising a first gate, a second gate, a third gate, and a fourth gate, said first and second gates establishing said proximal valve cavity, said second and third gates establishing said central valve cavity, and said third and fourth gates establishing said distal valve cavity.